REMARKS

Upon entry of this Reply, new claims 26-30 will be presented for examination. Claims 1-25 have been canceled. Reconsideration of the application is requested.

The informalities referred to by the Examiner in the objection set forth on pages 2-3 are eliminated by the amendments appearing above. Several other informalities are also eliminated.

The rejections under 35 U.S.C. §103(a) set forth on pages 3-4 of the Office Action are overcome by the cancellation of claims 1 and 2. It is respectfully submitted that new claim 26 is patentable over U.S. Patent 3,971,435 to Peck and over the device of the Peck patent as the Examiner proposes to modify it in view of the disclosure of U.S. Patent 5,960,866 to Kimura et al.

The Peck patent discloses a cooling plate in which a lid covers grooves formed in a plate body. However, the Peck patent does not disclose joining the lid and the body by friction stir welding. As described from page 2, line 25 to page 3, line 8 of the specification of this application, laser welding, diffusion bonding, brazing or the like produce large heat distortion, and a corrective machining process after the joining operation is required to correct distortion of the lid and body. Friction stir welding is solid phase welding, and the heat distortion is small, permitting use of a simplified correction process after joining. Friction stir welding is not a simple equivalent of other welding processes as the Examiner concludes. The Peck

patent relied on does not disclose a cooling plate comprising a lid joined to a body by friction stir welding along a periphery of at least one groove, and a weld bead outside the at least one groove as claim 26 defines. It is respectfully submitted that new claim 26 is patentable over the Peck patent.

The Kimura et al. method also does not disclose or suggest joining a lid on a groove of a body by friction stir welding. The comments provided above concerning the Peck device are equally applicable to the Kimura et al. method. The Peck and Kimura et al. disclosures, considered as a whole, do not suggest a cooling plate comprising a lid joined to a body by friction stir welding along a periphery of at least one groove, and a weld bead outside the at least one groove as claim 26 defines. Claim 26, therefore, is patentable.

Claims 27-30 depend on claim 26 and are patentable along with claim 26. In addition, claims 28-30 are separately patentable. In order to join a lid on a groove by friction stir welding to obtain a well-joined portion, it is necessary to effect the welding so as to form a weld bead along the periphery of the groove and outside of the groove. Claim 29 includes limitations directed to a second groove having a width larger than the first groove into which the lid is fitted and along the periphery of which friction stir welding is performed to achieve this. In friction stir welding, furthermore, a recess is likely to occur at the joining portion. Therefore, claim 30 reflects the provision of a projection in the vicinity of the joining portion so as to prevent formation of such a recess. In friction

stir welding, moreover, a void is likely to occur at the terminal end of the weld bead and, therefore, claim 28 reflects terminating the weld bead beyond the periphery of the groove. These are specific requirements for friction stir welding and are not anticipated by or obvious in view of the prior art relied on by the Examiner.

This application is now in condition for allowance. Should the Examiner have any questions after considering this Reply, the Examiner is invited to telephone the undersigned attorney.

Respectfully submitted,

April 17, 2003

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